

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

In the Matter of the Application of)	
)	
PUBLIC UTILITIES COMMISSION)	DOCKET NO. 2008-0273
)	
Instituting a Proceeding to Investigate the)	
Implementation of Feed-in Tariffs.)	
)	
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**HAWAII SOLAR ENERGY ASSOCIATION'S RESPONSES TO
INFORMATION REQUESTS FROM HAWAIIAN ELECTRIC COMPANY AND
THE DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM
REGARDING ITS OPENING STATEMENT OF POSITION AND PROPOSAL FOR
FEED-IN TARIFF DESIGN, POLICIES AND PRICING METHODS**

**AND
CERTIFICATE OF SERVICE**

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COMMISSION

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OF THE STATE OF HAWAII

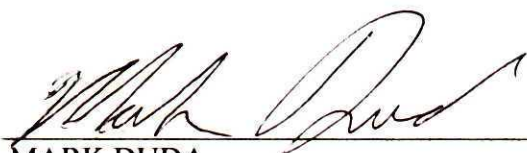
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Pursuant to the Commission's Order Approving the HECO Companies' Proposed Procedural Order, as Modified, filed on January 20, 2009, Hawaii Solar Energy Association ("HSEA") hereby submits the following Responses to Information Requests from the HECO Companies and the Department of Business, Economic Development and Tourism on its Opening Statement of Position and Proposal for Feed-in Tariff Design, Policies and Pricing Methods.

Respectfully submitted.

DATED: Honolulu, Hawaii, *March 13, 2009*



MARK DUDA

President, Hawaii Solar Energy Association

HECO/HSEA-IR-1

Do you agree that in addition to achieving a greater level of renewable energy for the State, reliability, power quality and ratepayer impacts are important considerations that must be addressed as a part of any feed-in tariff (FIT) design? If not, please discuss why not.

RESPONSE:

Yes. However, it is important to keep in mind that: (i) a feed-in tariff is a *price* specification designed to economically motivate the rapid development of renewable energy generation and (ii) that a number of factors outside the scope of this proceeding influence reliability, power quality, and ratepayers impacts.

HECO/HSEA-IR-2

Do you agree that the HECO, MECO and HELCO systems have different technical and reliability considerations? If not, please discuss why not.

RESPONSE:

Yes.

HECO/HSEA -IR-3

Do you agree that due to the existing and/or anticipated levels of intermittent renewable resources on each island system, that there may be technical and/or operational constraints upon the amount of additional intermittent renewable energy that each island system can absorb? If not, please discuss why not.

RESPONSE:

Yes, which has resulted in the Section 18 of the HCEI Energy Agreement Page 27, which the parties agreed to address technical and/or operational constraints. Section 18 states, inter alia:

Distributed Generation (DG) and Distributed Energy Storage (DES)

Distributed generation, including biofueled and fossil facilities, combined heat and power, and small renewable technologies such as wind and photovoltaics, can help replace central station generation and improve local grid operations and reliability. Similarly, DES (such as batteries, ice storage systems, flywheels and super-capacitors) can aid in firming intermittent renewables and provide load shifting and peak-shaving capabilities. To support and accelerate the adoption of DG and DES (termed broadly, distributed energy resources), the parties agree to the following:

1. The **Hawaiian Electric Companies will facilitate** planning for distributed energy resources through the Clean Energy Scenario Planning process and Locational Value Maps, to identify areas where these resources have system benefits and can be reasonably accommodated. The Locational Value Maps will be completed and become publicly available by December 31, 2009.

2. **The utilities will support non-utility DG and DES by improving the process and procedure for interconnecting non-utility DG and DES to make it faster, efficient, and more transparent. By June 30, 2009, the Hawaiian Electric utilities will submit a review of the implementation of the Rule 14H tariffs, as amended in May, 2008.**

...

6. To the degree that **transmission and distribution automation and other smart grid technology investments are needed to facilitate distributed energy resource utilization, those investments will be recovered through the Clean Energy Infrastructure Surcharge** and later placed in rate base in the next rate case proceeding.

...

9. In order to accept higher levels of DG on the utility grid, significant investment in smart grid technologies and changes in grid operations may be needed. These investments, if demonstrated to be prudent and reasonable, will be recovered through the Clean Energy Infrastructure Surcharge or through the general rate case recovery process. (*Emphasis added.*)

HECO/HSEA-IR-4

How does your FIT proposal insure that reliability and power quality on each island electric system are maintained?

RESPONSE:

PV invertors positively contribute to the feeder voltage regulation and result in an improved voltage profile. At a high enough penetration, PV invertors may be able to provide feeder voltage support. (Additional studies are needed on penetration which will be conducted pursuant to the Hawaii Clean Energy Initiative.) *See, Distribution System Voltage Performance Analysis for High-Penetration Photovoltaics. NREL/SR-581-42298, February 2008.*

HECO/HSEA-IR-5

What specific data, evaluations, studies or analyses did you rely upon as a part of any conclusion that your FIT proposal insures reliability on each island system? Please provide that data, evaluations, studies and/or analyses to the extent they are available.

RESPONSE:

- Distribution System Voltage Performance Analysis for High-Penetration Photovoltaics. NREL/SR-581-42298, February 2008.
- HECO's Ramp Rate Performance Standard for Intermittent Generation on the HECO System, _ March 14, 2008 at 8-10.
- Big Island Energy Road Map – Status, Terry Surles, Hawaii Natural Energy Institute, October 17, 2007.
- Technology Issues in Renewable Energy and Energy Efficiency, presented to the Hawaii State Legislature by Richard Rocheleau, Hawaii Natural Energy Institute, January 22, 2009.

HECO/HSEA-IR-6

As variable generation is presently having an adverse impact on a system's reliability, how would your FIT proposal mitigate any further adverse impacts?

RESPONSE:

HSEA does not agree with the assumption posed in this question that "As variable generation is presently having an adverse impact on a system's reliability". As discussed in our response to HECO/HSEA-IR-3, the utility has agreed to facilitate the acceptance of higher levels of DG on the utility grid. See also, our response to HECO/HSEA IR-4 and 5 in support of the proposition that PV has a positive impact on the utility system's reliability.

HSEA also notes that: (i) it is not clear to which "system" the question refers to and (ii) what the term "system" means in this context (*i.e.*, grid vs. circuit vs. other). Additionally, HSEA notes that to the extent that "variable generation is presently having an adverse impact on a system's reliability," the question is not phrased in a way that makes it possible for HSEA to know whether or not its expertise in solar PV is relevant, given that different forms of variable generation have different relationships with load.

HECO/HSEA-IR-7

Do you agree that your FIT proposal could result in increases in the rates paid by utility ratepayers? If so, what do you view as an acceptable level of increase for each of the utility system's ratepayers? What do you base that opinion on? Please provide any evaluations or analyses or studies used to support this opinion.

RESPONSE:

No, HSEA does not agree that its FIT proposal could result in increases in the rates paid by the utility ratepayers. The utility ratepayers may experience an increase in the short-run, but in the long-run (the 20 year term of the FIT contract) the utility ratepayer will experience: (i) stable and set rates; (ii) a decrease in rates, especially if the price of oil keeps rising in the next 20 years; and (iii) economic growth generally because the use of PV will create a "green" industry in the State of Hawaii, thus creating job opportunities in Hawaii and reducing the amount of dollars exported from the state to purchase fossil fuels. Based on the following assumptions:

Hypothetical System Size/Cost/Production

System Size kW	Sun Hours	Deerate	First year Annual kWh	20 year total kWh
10	5.4	0.77	15,177	303,269
100	5.4	0.77	151,767	3,032,686
500	5.4	0.77	758,835	15,163,431
1000	5.4	0.77	1,517,670	30,326,863

"Business as usual" cost of energy was based on 2007 Average Electric Rates for the HECO website. This rate was escalated at 6.5% per year over the 20 life of the FiT contract. Business as usual does not include potential significant lumpy increases due to Decoupling, CEIS, i.e. underwater sea cable, smart grid, etc.....

All the systems are installed in January 1, 2010.

The projected kWh and the projected cents per KWH were multiplied to derive the \$ dollar value of the energy produce per year.

Transmission and distribution cost/changes are not considered factors since the Utility will recover these costs via the CEIS and Decoupling.

The result:

Utility	Rate Class	Year the Fit energy cost falls below the utility cost	Number of years that FiT Energy cost falls below the utility cost
HECO	Residntl	2020	10

	G rate	2019	11
	J Rate	2020	10
	P rate	2020	10
MECO	Residntl	2017	13
	G rate	2015	15
	J Rate	2015	15
	P rate	2015	15
Molokai	Residntl	2016	14
	G rate	2011	19
	J Rate	2013	17
	P rate	2014	16
Lanai	Residntl	2017	13
	G rate	2013	17
	J Rate	2012	18
	P rate	2013	17
HELCO	Residntl	2015	15
	G rate	2012	18
	J Rate	2014	16
	P rate	2014	16

Over the life of the 20 Year FIT agreement all the rate classes would experience a reduced cost of energy versus the utility business as usual cost of energy.

(Workpapers are available upon release.)

HECO/HSEA-IR-8

How does your FIT proposal insure that ratepayers within each of the three utility service territories do not receive significant rate increases?

RESPONSE;

See Response to HECO/HSEA-IR-7.

HECO/HSEA-IR-9

What specific data, evaluations, studies or analyses did you rely upon as a part of any conclusion that your FIT proposal insures that ratepayers within each of the three utility service territories do not receive significant rate increases? Please provide that data, evaluations, studies and/or analyses to the extent they are available.

RESPONSE;

See HSEA's Exhibit to HECO/HSEA-IR-5 and 7.

HECO/HSEA-IR-10

Do you agree that competitive bidding can provide benefits to ratepayers? If so, how does your proposal insure that ratepayers receive the benefits that competitive bidding can provide?

RESPONSE;

HSEA cannot take a position on this issue as no solar PV projects have been interconnected via the competitive bidding process.

HECO/HSEA-IR-11

Please explain why a feed in tariff should be applied to larger resources, rather than competitively bid to assure ratepayers the lowest prices for significant blocks of renewable energy?

RESPONSE:

HSEA notes again that no solar PV projects have been interconnected under the competitive bidding process. It is therefore not clear that competitive bidding would deliver solar energy to ratepayers.

In order to meet the penetration goals of the Hawaii Clean Energy Initiative feed in tariffs must be applied to larger resources because they eliminate the price/award uncertainty of competitive bidding. Relative to competitive bidding, FiT will encourage more PV developers into the market by providing them with a set price, while the uncertainty in competitive bidding raises the cost of capital for the developer and thus the ultimate price to the ratepayer.

HECO/HSEA-IR-12

Do you agree that if a Renewable Energy Generating Facility is unable to meet the technical requirements set forth in the utilities' rules relating to interconnection with the utility's electric system, that Renewable Energy Generating Facility should not be interconnected with the utility's electric system? If not, please discuss why not.

RESPONSE:

Yes, as long as the interconnection rules and requirements are applying best practices; i.e. Interstate Renewable Energy Council's Model Interconnection Standards and Procedures for Small Generator Facilities.

HECO/HSEA-IR-13

Do you agree that, as an electric system must remain in balance, if there is a greater amount of energy being generated in relation to load being served that generation must be reduced or curtailed to achieve system balance (assuming that load cannot be increased)? If not, please describe how the system balance can otherwise be achieved.

RESPONSE:

Yes.

HECO/HSEA-IR-14

Please explain how your proposal to require the utility to take all renewable energy generated by a FIT resource regardless of system need assures system balance and stability?

RESPONSE:

HSEA's proposal does not require the utility to take all renewable energy generated by a FIT resource regardless of system need assures system balance and stability. The HSEA proposal does require the utility to pay for all renewable energy generated by a FIT resource regardless of system need assures system balance and stability.

HECO/HSEA-IR-15

Is it your position that FIT resources may not be curtailed under any circumstance? If there are circumstances under which a FIT resource may be curtailed, please explain in detail how that curtailment would be accomplished. Please explain in detail how existing renewable projects fit into any curtailment order and the basis for assigning a lower curtailment priority to existing renewable resources.

RESPONSE:

No.

It is the utilities' decision as to how curtailments will be accomplished. To the extent that curtailment will be based upon the economics of the utilities, HSEA assumes that the utilities will take into account that under HSEA's proposal FIT generators will be paid even if they are curtailed.

HSEA's proposal does not assign a lower curtailment priority to existing renewable resources.

HECO/HSEA-IR-16

Please provide any evaluations, studies or analyses to support the following in your FIT proposal: (1) the inclusion of each renewable resource type; (2) the viability of each renewable resource type for each island system; (3) the project size demarcations for each renewable resource type; (4) the viability of each project size for each island system; and (5) the basis for a different or separate rate for each size demarcation (if applicable). This should include any information or evidence that you may have on the general or specific plans of any renewable resource developer to develop renewable resources of this type, and including the anticipated size of the project, on any island system within the next one, three and five years.

RESPONSE:

Please see response to HECO/HSEA-IR-5.

HSEA objects to the request for "any information or evidence that you may have on general or specific plans of any renewable resource developer to develop renewable resources of this type, and including the anticipated size of the project, on any island system within the next one, three and five years" because it calls for confidential, proprietary, and trade secret information from its members.

HECO/HSEA-IR-17

Please describe the methodology and rationale used to determine the proposed twenty (20) year terms in your FIT proposal for each technology. Please provide any evaluations, studies or analyses to support the proposed 20 years terms for each technology listed.

RESPONSE:

The proposed twenty (20) year term for PV came from HECO/CA's proposed FIT tariff sheets. Additionally, the 20 year term was used by HECO in its 100MW RFP and the State Department of Transportation in its RFP.

HECO/HSEA-IR-18

Please provide the bases for the proposed penetration limits for intermittent renewable energy sources. Please provide any evaluations, studies or analyses to support the proposed penetration limits, including in particular any evaluations, studies or analyses regarding maintenance of system reliability at the proposed penetration limits.

RESPONSE;

- See, Distribution System Voltage Performance Analysis for High-Penetration Photovoltaics. NREL/SR-581-42298, February 2008.

HECO/HSEA-IR-19

Please explain in detail how the proposed queuing procedures based upon those procedures proposed by the Midwest ISO would operate and be implemented for each island electric system. In particular, please provide any evaluations, studies or analyses of potential differences between the Midwest ISO service territory and the Hawaii utility electric systems and how those differences would be accommodated and addressed through your FIT proposal. Please discuss in detail whether the quality of power (steadiness, predictability, ability to enhance regulating resources on the grid and other such characteristic that are important to power reliability) should be a factor in setting the priority a project receives, and if not, why not.

RESPONSE:

The Midwest ISO queuing procedure¹ could operate and be implemented for each island electric system without significant modification.

Power quality and power reliability are factors affecting whether a project meets the utility's technical requirements for interconnection and, therefore, whether it is "ready-to-interconnect," but should not themselves be a factor in determining the priority that a project receives under the utility's queue management procedure for interconnection.

¹ See Midwest Independent Transmission System Operator ("Midwest ISO"), Generator Interconnection Process Tariff (August 25, 2008) http://www.midwestmarket.org/publish/Document/25f0a7_11c1022c619_7d600a48324a/Attachment%20X%20GIP.pdf?action=download&property=Attachment; Midwest ISO, Business Practices Manual: Generator Interconnection (Manual No. 15, TP-BPM-004-r2, January 6, 200p) http://www.midwestmarket.org/publish/Document/45e84c_11cdc615aa1_7e010a48324a; 124 FERC ¶ 61,183, Midwest Independent Transmission System Operator, Inc., Docket No. ER08-1169-000, Order Conditionally Accepting Tariff Revisions and Addressing Queue Reform (August 25, 2008) http://elibrary.ferc.gov/idmws/doc_info.asp?document_id=13641108; Working group for Investment in Reliable & Economic electric Systems (WIRES), Integrating Locationally-Constrained Resources Into Transmission Systems: A Survey of U.S. Practices (October 2008) http://www.wiresgroup.com/images/WIRES_Report_LCR.pdf

HECO/HSEA-IR-20

Should a utility be entitled to use the generated output of a renewable resource in its service territory toward meeting a state or county mandated RPS standard regardless of ownership of the environmental credits? If not, please discuss why not?

RESPONSE:

HSEA is not the governing body to determine entitlement of the generated output of a renewable resource toward the mandated RPS. However, it should be noted that the FIT proposed by HSEA will provide a lower cost of energy generation to the utility, compared to "business as usual cost" (HECO/HSEA-IR-7) over the life of the agreement, (20 years), and thus the proposed PV FIT rates do not include compensation for the RECs.

HECO/HSEA-IR-21

Please provide any evaluations, studies, analyses or data to support the rates contained in your FIT proposal including detailed support for the applicability of those rates to the specified resources on the Hawaii utilities' island systems.

RESPONSE:

SA proposed FIT rates are based on investor/financier's acceptance of FiT rates that would result in an 20 year commitment. There has been discussions/question regarding the cost plus + reasonable profit as a method, but at the end of the day, the FIT rates needs to be at a level that will trigger the investment. The State of Hawaii recently executed power purchase agreements for ten sites across the State on three islands. The investor was able to commit to these rates without utilizing the State's REITC. See table below

Executed Third Party Financed PV Projects (No State Tax Credit)										
Location	PV System Size	Baseline rate \$/kWh	Annual Escalation	Average Rate over 20 years						
Kauai- Aripport	154	0.38	2%	0.4617	100 to 500	\$ 0.396	\$ 0.436	\$ 0.475	\$ 0.475	\$ 0.444
Kauai- Aripport	112	0.38	2%	0.4617	100 to 500	\$ 0.396	\$ 0.436	\$ 0.475	\$ 0.475	\$ 0.444
Kauai- Aripport	35	0.38	2%	0.4617	11 to 100	\$ 0.436	\$ 0.479	\$ 0.523	\$ 0.523	\$ 0.488
Kauai- Aripport	35	0.38	2%	0.4617	11 to 100	\$ 0.436	\$ 0.479	\$ 0.523	\$ 0.523	\$ 0.488
Kauai- Highways	98	0.38	2%	0.4617	11 to 100	\$ 0.436	\$ 0.479	\$ 0.523	\$ 0.523	\$ 0.488
Kauai - Harbors	30	0.38	2%	0.4617	11 to 100	\$ 0.436	\$ 0.479	\$ 0.523	\$ 0.523	\$ 0.488
Hilo Airport	112	0.33	3%	0.4434	100 to 500	\$ 0.396	\$ 0.436	\$ 0.475	\$ 0.475	\$ 0.444
Kona Airport	60	0.32	3%	0.4299	11 to 100	\$ 0.436	\$ 0.479	\$ 0.523	\$ 0.523	\$ 0.488
Kahului - Airport	112	0.32	3%	0.4299	100 to 500	\$ 0.396	\$ 0.436	\$ 0.475	\$ 0.475	\$ 0.444
Kahului - Airport	31	0.32	3%	0.4299	11 to 100	\$ 0.436	\$ 0.479	\$ 0.523	\$ 0.523	\$ 0.488

SA's proposed FiT rates is levelized for 20 twenty years with no escalation. The third party financed rates start lower and escalate over the life of the agreement. In order to provide sum degree of comparison, the "Average Rate over 20 years" column reflects the average of the escalated rates for twenty year. The green labeled section is the proposed FiT rates for the relative system size. The proposed SA FiT rates is definitely within reason, (some above/some below) the third party financed contracts that the State of Hawaii signed.

Also in support of HSES's proposed FIT rates is the following article:

Ontario Proposes Precedent-Setting Renewable Tariffs

World Class Solar Tariffs for North America
March 12, 2009

By Paul Gipe

(Toronto, Ontario) Ontario's Minister of Energy and Infrastructure, George Smitherman, announced today that the Ontario Power Authority (OPA) will be establishing a system of feed-in tariffs as a result of the pending Green Energy and

Green Economy Act.

Minister Smitherman also released OPA's proposed tariffs for a host of renewable energy technologies.

If implemented, the package of tariffs will represent the first application of Advanced Renewable Tariffs in North America. The system of feed-in tariffs envisioned by Minister Smitherman is a Canadian version of the successful policies used in Germany, France, Spain, and several other European countries.

OPA will begin public consultation on the tariffs and elements of the program March 17th and will continue hearings for the next seven weeks.

The tariffs are precedent setting in North America not only for the number of different technologies listed, including offshore wind, but also for the prices offered.

Solar energy advocates will be particularly pleased. Ontario's proposed tariffs, if implemented, will be the highest in North America. For rooftop solar they will be comparable to those offered in Germany and France. On the other hand, Ontario's proposed tariffs for ground-mounted systems will be less than those in Germany, a country with a comparable solar resource.

OPA's press release suggested that the tariff for residential rooftop solar PV could result in 100,000 solar installations capable of generating one percent of Ontario's electricity supply. One percent of Ontario's supply is 1.5 TWh or nearly one-third the 2008 solar generation in Germany, the world's leader in solar energy.

Similarly, the tariffs for biogas plants will be among the highest, if not the highest on the continent. Unlike higher tariffs offered by some utilities in Wisconsin, Ontario's proposed tariffs are for 20-year contracts. The tariffs offered in Wisconsin are paid only for ten years.

The wind tariffs proposed are less robust than expected. The tariffs for onshore wind are nearly identical to those proposed by the Ontario Sustainable Energy Association in 2005. Since that time, the installed cost of wind turbines has increased substantially.

The proposed wind tariffs are comparable to those in France, but substantially less than those in Germany. And unlike in Germany

and France, the tariffs are not differentiated by resource intensity.

OPA proposes two wind tariffs, one for community wind projects, another tariff for everything else. OPA does not differentiate the tariffs further.

In another first in North America, OPA has proposed a specific tariff for offshore wind. Ontario fronts four of the Great Lakes: Superior, Huron, Erie, and Ontario. Consequently, Ontario has a huge offshore wind resource.

Currently, there are no wind turbines in any of the Great Lakes, though there are several proposals for projects in waters off Ontario.

The tariffs proposed by OPA represent the total payment for renewable energy. There are no federal or provincial subsidies for renewable electricity generation in Ontario.

While several US states have rudimentary feed-in tariffs, often with contracts of limited length, no US state has as comprehensive a system of feed-in tariffs as that proposed by OPA. Nor does any state in the US pay as high tariffs as those proposed in Ontario, in part because of lucrative US federal tax subsidies.

**Ontario Ministry of Energy's Proposed Renewable Energy Tariffs
2009**

12-Mar-09

Years 1 649 0 777
€ / kWh \$ CAD / kWh USD / kWh

<input checked="" type="checkbox"/>	Wind			
	Onshore	20, 0.0819	0.135	0.105
	Offshore	20, 0.1152	0.190	0.148
	Community-based <10 MW	20, 0.0873	0.144	0.112
	Photovoltaics			
	Rooftop <10 kW	20, 0.4864	0.802	0.623
	Rooftop >10 kW<100 kW	20, 0.4325	0.713	0.554
	Rooftop >100 kW<500 kW	20, 0.3851	0.635	0.494
	Rooftop >500 kW	20, 0.3269	0.539	0.419
	Groundmounted <10 MW	20, 0.2687	0.443	0.344
	Hydro			
	<50 MW	20, 0.0782	0.129	0.100
	Community-based <2 MW	20, 0.0813	0.134	0.104
	Landfill Gas			
	<5 MW	20, 0.0673	0.111	0.086
	>5 MW	20, 0.0625	0.103	0.080
	Biogas			
	<5 MW	20, 0.0892	0.147	0.114
	>5 MW	20, 0.0631	0.104	0.081
	Biomass			
	Any size	20, 0.0740	0.122	0.095

HECO/HSEA-IR-22

Please explain how your proposed rates are affected by the key costs and operating characteristics referenced in the Commission's NRRI Scoping Paper filed December 11, 2008.

RESPONSE:

The key costs and operating characteristics referenced in the Commission's NRRI Scoping Paper were taken into consideration in establishing SA's proposed rates. However, the factor that had the most significant was what rate would encourage investors to invest in PV energy in Hawaii.

HECO/HSEA-IR-23Ref: Issue 3

Please describe in detail your statement that a PBFit is not necessarily a superior mechanism for certain technologies including identification of the technologies and the specific reasons why a PBFit is not a superior mechanism for those technologies.

RESPONSE:

HSEA's response to Issue No. 3 was intended to convey the fact that HSEA can offer only limited insight into the extent to which a "PBFiT is the superior methodology to meet Hawaii's clean energy and energy independence goals" for some technologies because knowing which mechanism is superior would require an awareness of factors - such as financing terms, sources of risk, and rates of return – that HSEA does not have access to for some technologies.

HECO/HSEA-IR-24Ref: Issue 3

Please describe in detail all impediments to potential investors achieving a sufficient risk adjusted rate of return on solar projects in the State of Hawaii

RESPONSE:

The primary impediment to potential investors achieving a sufficient risk adjusted rate of return on solar projects in the State of Hawaii is the lack of functioning a state level incentive. Additionally, in a subset of situations, the following other factors are involved: net energy metering limit of 100 kW per system, length of time and unknown result of IRS study, length Interconnection negotiations, and land use approval, permitting (length of time).

HECO/HSEA-IR-25

Please explain how your proposed rates are affected by the key costs and operating characteristics referenced in the Commission's NRRI Scoping Paper filed December 11, 2008.

RESPONSE:

The costs and operating characteristics are embedded in the rates proposed by HSEA, because these rates reflect marketplace realities in the absence of a feed-in tariff.

HECO/HSEA-IR-26

Please provide any evaluations, studies, or analysis to support modifying Rule 14H, such that the penetration level at which an interconnection study is required is increased from 10% to 15%, to ensure that other customers on the distribution circuit are not adversely affected during islanding or disturbance conditions.

RESPONSE:

As noted in HSEA's Opening Statement of Position with Respect to Issue #4, its suggestion of an increase from 10 to 15 percent is based on the level proposed in the Energy Agreement signed by the State and the HECO Companies. Section 19, Net Energy Metering, notes that "Distributed generation interconnection will be limited on a per-circuit basis, where generation (including PV, micro wind, internal combustion engines, and net metered generation) feeding into the circuit shall be limited to no more than 15% of peak circuit demand for all distribution-level circuits of 12kV or lower;" and "For those circuits where interconnection requests (particularly for PV) approach the 15% limit, the utility will perform and complete within 60-days after receipt of an interconnection request, a circuit-specific analysis to determine whether the limit can be increased." HSEA believed that, taken together, these two statements indicated a comfort level with 15 percent DG interconnection given current technology, with the potential for higher levels in response to grid upgrades. In addition, HSEA notes that evidence regarding the usefulness of the 10 percent threshold of the interconnection study is currently being amassed by the HECO companies via the IRS studies they have currently required of some developers.

HECO/HSEA-IR-27

Please explain how system monitoring and control of projects connected via the FIT can be achieved, if the requirement for SCADA interface is removed? Does HSEA believe that penetrations of solar energy should be limited to the levels that can be achieved without negative impact on reliability given currently standard component on solar projects, or does it support enhancing the capabilities of solar projects in order to achieve a greater overall percentage?

RESPONSE:

HSEA was unable to determine which of its responses is referred to by HECO/HSEA-IR-27. Without context for the question HSEA finds it impossible to formulate an answer.

HECO/HSEA-IR-28

If entities are compensated for curtailment, and given that the HSEA does not support caps, what mechanism would be enacted to avoid connecting projects which far exceed the system demand so that the system is unable to take the energy, resulting in excessive rate increases in order to compensate for non-production?

RESPONSE:

Given the rapid development of grid infrastructure technology and the utility's proposed movement to "smarten" the grid, HSEA does not believe that it is appropriate to speculate on what the appropriate answer will be given the state of grid infrastructure, storage, and technology development at the time when projects that "far exceed the system demand" are proposed for interconnection.

HECO/HSEA-IR-29

Given that HSEA does not support caps, what mechanism will be utilized to ensure the necessary infrastructure and mix of generation resources to provide transfer capability, system frequency control, load following, voltage control, and system stability through faults?

RESPONSE:

HSEA believes that the choice of infrastructure to address grid stability and reliability concerns will ultimately be determined by the utility under direction from the Commission. HSEA believes that whatever mechanism chosen should be selected based on its ability to ensure that the greatest level of renewable penetration is achieved.

CERTIFICATE OF SERVICE

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